

Translation of the pertinent portions of a Notification
Regarding the Forwarding of the International Preliminary
Examination Report in Respect to Patentability, mailed 08/22/2006

2. This report comprises a total of 7 pages, including the cover page.

3. Furthermore, ATTACHMENTS are included, these consist of

a. (sent to Applicant and the International Office), a total of 4 pages, which are

pages replacing former pages which, for the reasons mentioned in Field No. 1, Item 4 and in the additional field, in the opinion of the Office contain a change which goes beyond the disclosure content of the international application in the original version.

3. This report contains information regarding the following items:

Field I	Basis of the Report
Field V	Reasoned Determination under Article 35(2)
Field VIII	Certain Remarks Regarding the International Application

Field No. I Basis of the Report

1. Regarding the **language**, the report is based on

the international application in the language in which it was filed

2. Regarding the **components** of the international application, the report is based on (replacement pages which have been filed with the Application Office upon a request in accordance with Article 14 are considered to have been "originally filed" within the framework of this report and have not been added to it):

Specification, pages

1 to 7 in the originally filed version,

Claims Nos.

1 to 19 received 07/29/2005 with letter of 07/28/2005

Drawings, sheets

1/3 to 3/3 in the originally filed version.

Field No. V Reasoned Determination under Article 35(2)

1. Determination

Novelty	Yes: Claims 1 to 19
	No:

Inventive Activities	Yes: Claims
	No: Claims 1 to 19

Commercial Applicability	Yes: Claims 1 to 19
	No: Claims

2. References and Explanations

see the attached sheet

**Field No. VIII Certain Remarks Regarding the International
Application**

see the attached sheet

ATTACHED SHEET

Reference is made to the following documents:

D1: USP 4,685,139

D2: USP 5,712,921

1.

The application does not meet the requirements of Article 6 PCT, because the claims are not clear.

Claim 1: How is the "reference image" created? What is the "maximum value" or "minimal value" of each pixel supposed to represent, wherein one pixel can always only assume one definite value?

In accordance with the specification, the reference image is generated from several recordings, wherein the respective maximum and minimum values of the pixel amplitudes are stored as "reference image".

The determination of the deviation (lines 10 to 13 of claim 1) is unclear, because it has not been specified in detail at what time a comparison with the "maximum value" or the "minimum value" is made (see the word "or" at the end of line 12). In this preliminary report it has been assumed that a comparison with the maximum value is made if the actual pixel value lies above A_{imax}, and a comparison with the minimum value is made if the actual pixel value falls below A_{imin}.

The characteristic "... correlated to a deviation of a greater amount ..." (last and penultimate line) is not mentioned in the specification. Therefore claim 1 is not supported by the specification as required by Article 6 PCT.

Claim 4: the word "adjustable" has no relationship with claim 1.

Claim 8: the words "warning threshold" and "error threshold" have no relationship with claim 7 or claim 1.

Claim 9: the contents of this claim are completely obscure. How can a deviation from a reference image which is created at the same time be determined?

Claim 11: what does "while forming ... in area"? What is the purpose of said check, or what are its consequences?

Claim 12: which "deviation" is meant: the one in claim 1 or the one in claim 11?

Claim 13: an attempt is made to disclose the characteristic of this claim by means of a result to be achieved. How is the setting to be actually made?

Claim 15: the content of this claim is unclear (what, for example, is a "fixed area"?), the specification also does not appear to make a sufficient explanation available.

2.

The present application does not meet the requirements of Article 33(1) PCT, because the subject of claim 1 is not based on inventive activities within the meaning of Article 33(3).

Document D1 is considered to represent the closest prior art in connection with claim 1 (the references in parentheses relate to this document):

A method for detecting an error in printed images generated by a printing press, wherein the error is determined by means of a comparison of at least one of the printed images actually recorded by means of a line-scanning color camera in the course of an ongoing printing process with a reference image (col. 1, lines 7 to 9, col. 3, lines 57 to 64), wherein amplitude values in individual color channels of the line-scanning color camera are determined from a recording of the printed image and from the reference image in regard to a pixel field consisting of several pixels (col. 3, line 52, col. 9, lines 61 to 64), wherein the reference image is respectively determined by a maximum value and a minimum value of each pixel in the pixel field, wherein a deviation is determined between an amplitude value determined from the printed image and the reference image for the pixel field, wherein the reference image is determined for every pixel in the pixel field, wherein the printed product is classified as having a poor print quality if the detected deviation exceeds a set decision threshold (col. 9, lines 55 to 57: expressed complementarily), characterized in that the deviation is evaluated by means of two decision thresholds whose amounts follow each other in the direction of an increasing deviation (Fig. 11a), wherein the printed product is classified as having a poor print quality if the deviation exceeds a decision threshold correlated with a deviation of increased value (col. 3, lines 57 to 64).

The crossed out characteristics cannot be found directly in D1.

D1 describes a slightly different procedure for detecting an error, however, this is only an alternative representation.

In D1, first the (absolute) deviation (difference) from a reference value which is stored for every pixel is determined (Fig. 10a, col. 9, lines 34 to 60). Thereafter a check is made in the course of which it is determined whether the pixel deviations fall within a fixed tolerance range (i.e. within a definite minimum and maximum range) (col. 9, lines 61 to 64). When this tolerance range is exceeded, this is considered to be an error (col. 9, lines 52 to 60).

Since the crossed-out characteristic in claim 1 is therefore equivalent to the representation published in D1, this characteristic is only one of several obvious possibilities from which one skilled in the art would make a selection in accordance with the circumstances and without inventive actions in order to attain the stated object. Therefore claim 1 does not contain an inventive step.

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The dependent claims do not contain any characteristics which in combination with the characteristics of any claim from which they depend, meet the requirements of PCT in regard to novelty or inventive activities. The reasons for this are the following: these characteristics can be found, applied in the same or similar manner for the same or similar application in the publications D1 and D2:

Claims 2, 4, 5, 6, 8: D2, col. 11, lines 36 to 44: two warning thresholds in connection with the evaluation of a prototype (reference) image.

Claim 3: D2, col. 11, lines 36 to 44, and D1, col. 10, lines 58 and 59.

Claim 7: D1, col. 9, lines 61 to 66.

Claim 9: no statement possible because of the lack of clarity of the claim.

Claim 10: D1, col. 9, lines 13 to 18, Fig. 9.

Claim 11: D2, col. 8, lines 16 to 19.

Claims 12, 13: D2, col. 11, lines 16 to 18.

Claims 14, 15: D2, col. 11, lines 36 to 44, col. 14, lines 31 to 45.

Claims 16 to 18: D2, col. 11, lines 48 to 50.

Claim 19: obvious alternative.

One skilled in the art would apply these characteristics without any inventive steps to the apparatus of D1 and in this way arrive at the claimed subject of the present invention.

Therefore the present application does not meet the requirements within the meaning of Article 33 of PCT.

The industrial applicability is given within the technical field of quality control of generated printed images.

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Claims

1. A method for detecting an error in printed images (03) generated by a printing press, wherein the error is determined by means of a comparison of at least one of the printed images (03) actually recorded by means of a line-scanning color camera (01) in the course of an ongoing printing process with a reference image, wherein amplitude values (A_{xy}) of individual color channels of the line-scanning color camera (01) are determined from a recording of the printed image (03) and from the reference image in regard to a pixel field consisting of several pixels (i), wherein the reference image is respectively determined by a maximum value (A_{imax}) and a minimum value (A_{imin}) of each pixel (i) in the pixel field, wherein a deviation between an amplitude value (A_{ip}) determined for the respective pixel (i) from the recording of the printed image (03) and the respective maximum value (A_{imax}) or the respective minimum value (A_{imin}) is determined for every pixel (i) in the pixel field, wherein the determined deviation is evaluated for detecting the error, wherein the printed product is classified as having a poor print quality if the detected deviation exceeds a set decision threshold (W, F), characterized in that the deviation is evaluated by means of two decision thresholds (W, F) whose amounts follow each other in the direction of an increasing deviation, wherein the printed product is classified as having a poor print quality if the deviation exceeds a decision threshold (F) correlated with a deviation of increased value.

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2. The method in accordance with claim 1, characterized in that the decision threshold correlated with a smaller amount of deviation constitutes a warning threshold (W) and the decision threshold correlated with a larger amount of deviation an error threshold (F).

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3. The method in accordance with claim 1, characterized in that each of the decision thresholds (W, F) is set independently of the respectively other one.

4. The method in accordance with claim 1, characterized in that it is determined by means of the adjustable decision thresholds (W, F) at what number of different pixels (i) of the pixel field a deviation must occur so that either a warning or an error report is generated.

5. The method in accordance with claim 2, characterized in that a warning is generated when the warning threshold (W) has been reached.

6. The method in accordance with claim 2, characterized in that an error report is generated when the error threshold (F) has been reached.

7. The method in accordance with claim 1, characterized in that a contrast (AK) existing between the actually recorded printed image (03) and the reference image is evaluated as a deviation between the actually recorded printed image (03) and the reference image.

8. The method in accordance with claim 7, characterized in that a warning is issued if the contrast (AK) in respect to the

reference image for one or several pixels (i) lies above the warning threshold (W), but still below the error threshold (F).

9. The method in accordance with claim 1, characterized in that in the course of a learning phase amplitude values (Axy) in a line-scanning color camera (01) are computed into a reference image by an image processing system (04), wherein a deviation determined in the learning phase does not exceed a decision

threshold (F) which classifies a printed product as having a poor print quality.

10. The method in accordance with claim 1, characterized in that the reference image with the respective maximum values (A_{imax}) and minimum values (A_{imin}) is generated for each pixel (i) from recorded amplitude values (A_{xy}) of several recordings.

11. The method in accordance with claim 1, characterized in that a check is performed whether several pixels (i) in the pixel field exceed one of the decision thresholds (W, F) by forming a deviation occurring over an area.

12. The method in accordance with claim 11, characterized in that the area of the pixel field is determined in which a deviation from the reference image exists.

13. The method in accordance with claim 11, characterized in that the decision thresholds (W, F) are set for the area of the pixel field.

14. The method in accordance with claim 11, characterized in that the area of the pixel field is determined whose amplitude values (A_{xy}) lie above the error threshold (F).

15. The method in accordance with claim 11, characterized in that an error weight (FG) is set, wherein the error weight (FG)

constitutes a value for all deviations which are maximally permissible in a fixed area of the pixel field, wherein when the error weight (FG) is exceeded an error is reported independently of the deviation occurring over the area.

16. The method in accordance with claim 1, characterized in that a display of the deviations is provided on a monitor (06) separated in accordance with the type of deviation.

17. The method in accordance with claim 16, characterized in that the deviation is displayed on the monitor (06) superimposed positionally accurately on the actual printed image (03).

18. The method in accordance with claim 16, characterized in that the display represents a deviation in the quality of the printed product.

19. The method in accordance with claim 1, characterized in that an area-scanning color camera (01) is employed instead of a line-scanning color camera (01).